

AO #5 6AL/2631

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of: G. DIWAKAR VISHAKHADATTA ET AL.

Filed: MARCH 29, 2001

For: DIGITAL INTERFACE IN RADIO-FREQUENCY APPARATUS AND  
ASSOCIATED METHODS

Serial No.: 09/821,340

Group Art Unit: 2631

Examiner: UNKNOWN

Atty Dkt: SILA:073



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Pursuant to 37 C.F.R. 1.8, I certify that this correspondence is being deposited with the U.S. Postal Service in a first class, postage prepaid envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on the date below:

9-18-01 Marty Bower  
Date Name

**INFORMATION DISCLOSURE STATEMENT**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Pursuant to 37 C.F.R. §§ 1.56, 1.97, and 1.98, it is respectfully requested that this Information Disclosure Statement be entered and the document(s) listed on attached Form PTO-1449 be considered by the Examiner and made of record.

In accordance with 37 C.F.R. §§ 1.97(g),(h), this Information Disclosure Statement is not to be construed as a representation that a search has been made, and is not to be construed to be an admission that the information cited is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56(b).

The present Information Disclosure Statement is being filed prior to the receipt of a first Official Action reflecting an examination on the merits, and hence is believed to be timely filed in

accordance with 37 C.F.R. § 1.97(b). No fees are believed to be due in connection with the filing of this Information Disclosure Statement, however, should any fees under 37 C.F.R. §§ 1.16 to 1.21 be deemed necessary for any reason relating to these materials, the Commissioner is hereby authorized to deduct said fees from Deposit Account No. 10-1205/SILA:073

A copy of the listed document(s) required by 37 C.F.R. § 1.98(a)(2) are enclosed for the convenience of the Examiner.

Applicant respectfully requests that the listed document(s) be made of record in the present case.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read 'MR Peterson', is written over a horizontal line.

Maximilian R. Peterson  
Reg. No. 46,469  
Attorney for Applicant

O'KEEFE, EGAN & PETERMAN, LLP  
1101 Capital of Texas Highway South  
Building C, Suite 200  
Austin, Texas 78746  
(512) 347-1611  
FAX: (512) 347-1615

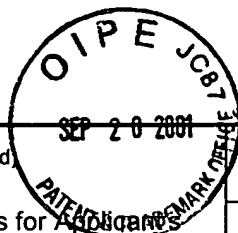
Enclosures

**Form PTO-1449** (modified)

List of Patents and Publications for Applicants

**INFORMATION DISCLOSURE STATEMENT**

(Use several sheets if necessary)



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U.S. Patent Documents

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Foreign Patent Documents

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Other Art

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**U.S. Patent Documents**

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date if App.
	A1	5,828,955	10/27/98	Lipowski et al.			8/30/95
	A2	6,035,186	3/7/00	Moore et al.			3/11/97
	A3	6,075,979	6/13/00	Holtvoeth et al.			3/5/97
	A4	5,764,171	6/9/98	Stikvoort			4/2/96

**Foreign Patent Documents**

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date if App.
	B1	WO 00/22735	4/20/00	Ali			
	B2	GB2233518A	1/9/91	Dedic			
	B3	0643477A2	3/15/95	Hulkko et al.			
	B4	WO 00/11794	3/2/00	Moore et al.			
	B5	WO 00/01074	1/6/00	Van Der Zwan et al.			

**Other Art (Including Author, Title, Date, Pertinent Pages, Etc.)**

Exam. Init.	Ref. Des.	Citation
	C1	Stephen Jantzi et al., "Quadrature Bandpass $\Delta\Sigma$ Modulation for Digital Radio," IEEE Journal of Solid-State Circuits, Vol. 32, No. 12, December 1997, pp. 1935-1950.
	C2	Stephen Jantzi et al, "A Complex Bandpass $\Delta\Sigma$ Converter For Digital Radio," ISCAS, May/June 1994, pp. 453-456.
	C3	"Analog Devices Delivers World's First Open Market GSM Direct Conversion Radio Chipset," Analog Devices Corporate Information Press Release, <a href="http://contentanalog.com/pressrelease/prdisplay/0,1622,102,00.html">http://contentanalog.com/pressrelease/prdisplay/0,1622,102,00.html</a> , September 13, 1999, pp. 1-4.

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Other Art

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**Other Art (Including Author, Title, Date, Pertinent Pages, Etc.)**

Exam. Init.	Ref. Des.	Citation
	C4	Data Sheet, CX74017, "RF Transceiver for Single, Dual, or Tri-Band GSM/GPRS Applications," Conexant, January 2, 2001, pp. 1-16.
	C5	Jacques C. Rudell et al., "A 1.9-GHz Wide-Band IF Double Conversion CMOS Receiver for Cordless Telephone Applications," IEEE Journal of Solid-State Circuits, Vol. 32, No. 12, December 1997, pp. 2071-2088.
	C6	Jan Crols et al., "Low-IF Topologies for High-Performance Analog Front Ends of Fully Integrated Receivers," IEEE Transactions on Circuits and Systems-II: Analog and Digital Signal Processing, Vol. 45, No. 3, March 1998, pp. 269-282.
	C7	Jacques C. Rudell et al., "Recent Developments In High Integration Multi-Standard CMOS Transceiver for Personal Communication Systems," invited paper at the 1998 International Symposium on Low Power Electronics, Monterey, California, 6 pgs.
	C8	Asad Abidi, "CMOS Wireless Transceivers: The New Wave," IEEE Communications Magazine, August 1999, pp. 119-124.
	C9	Data Sheet, UAA3535HL, "Low Power GSM/DCS/PCS Multi-band Transceiver," Philips Semiconductors, February 17, 2000, pp. 1-24.
	C10	Stephen Jantzi et al., "FP 13.5: A Quadrature Bandpass $\Delta\Sigma$ Modulator for Digital Radio," Digest of Technical Papers, 1997 IEEE International Solid-State Circuits Conference, First Edition, February 1997, pp. 216-217, 460.
	C11	S. A. Jantzi et al., "The Effects of Mismatch In Complex Bandpass $\Delta\Sigma$ Modulators," IEEE, 1996, pp. 227-230.
	C12	Qiuting Huang, "CMOS RF Design-The Low Power Dimension," IEEE 2000 Custom Integrated Circuits Conference, pp. 161-166.
	C13	Paolo Orsatti et al., "A 20-mA-Receive, 55-mA-Transmit, Single-Chip GSM Transceiver in 0.25- $\mu$ m CMOS," IEEE Journal of Solid-State Circuits, Vol. 34, No. 12, December 1999, pp. 1869-1880.
	C14	Qiuting Huang et al., "The Impact of Scaling Down to Deep Submicron on CMOS RF Circuits," IEEE Journal of Solid-State Circuits, Vol. 33, No. 7, July 1998, pp. 1023-1036.
	C15	Behzad Razavi, "Design Considerations for Direct-Conversion Receivers," IEEE Transactions on Circuits and Systems-II: Analog and Digital Signal Processing, Vol. 44, No. 6, June 1997, pp. 428-435.

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Exam. Init.	Ref. Des.	Citation
	C16	Farbod Behbahani et al., "CMOS Mixers and Polyphase Filters for Large Image Rejection," IEEE Journal of Solid-State Circuits, Vol. 36, No. 6, June 2001, pp. 873-887.
	C17	Jan Crols et al., "A Single-Chip 900 MHz CMOS Receiver Front-End With A High Performance Low-IF Topolgy," IEEE Journal of Solid-State Circuits, Vol. 30, No. 12, December 1995, pp. 1483-1492.
	C18	Analog Devices, Single-Chip Direct-Conversion GSM/GPRS/EDGE RFIC, Othello One, <a href="http://www.analog.com">www.analog.com</a> , 2 pgs.
	C19	Analog Devices, AD6523/AD6524, GSM Direct Conversion Radio Chip Set, <a href="http://www.analog.com">www.analog.com</a> , 2 pgs.
	C20	Analog Devices, GSM 3 V Transceiver IF Subsystem, AD6432, <a href="http://www.analog.com">www.analog.com</a> , pp. 1-20.

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